

A photograph of a D-Wave quantum annealer installation in a server room. The machine is a large, black, modular system with multiple cabinets. The 'D-Wave' logo is illuminated vertically on the side of the cabinets. A central cabinet has a glass door revealing internal components and a blue light strip. To the right, a blue gas cylinder is visible. The room has a white floor, white walls with electrical conduits, and a metal ceiling with cable trays.

D-WAVE Installation

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Introduction

- Ising: LANL's D-Wave 2X system
 - Quantum annealing computer, and
 - A physics experiment which operates at 10 mK, 300 times cooler than interstellar space
- Tight facility requirements
 - Low vibration & other disturbances
 - Highly reliable power and cryogenic cooling
 - ...at much lower power than HPC
- Installation steps

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Vibration Isolation Concrete Pad Installation and Prep



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Sump Pump Installation



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Wall Prep for D-WAVE Enclosure



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UPS & Sheet Metal Installation



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Make-Up Water Piping to Closed Loop System



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Installed PDU & UPS



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Closed Loop Piping, Refrigerant Piping and Pumps. N+1 Pumps



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Generator Transfer Switch & Mechanical Equipment Controls

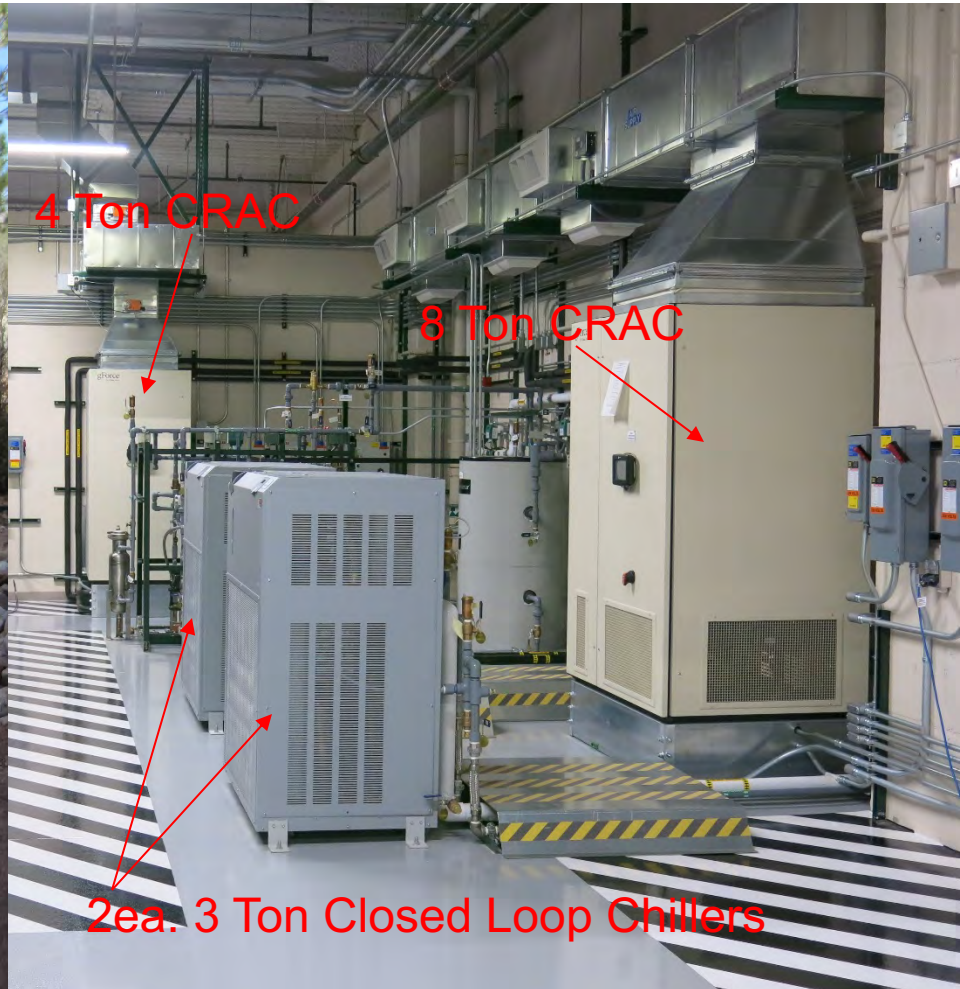


Generator Transfer Switch

Mechanical Equipment Controls

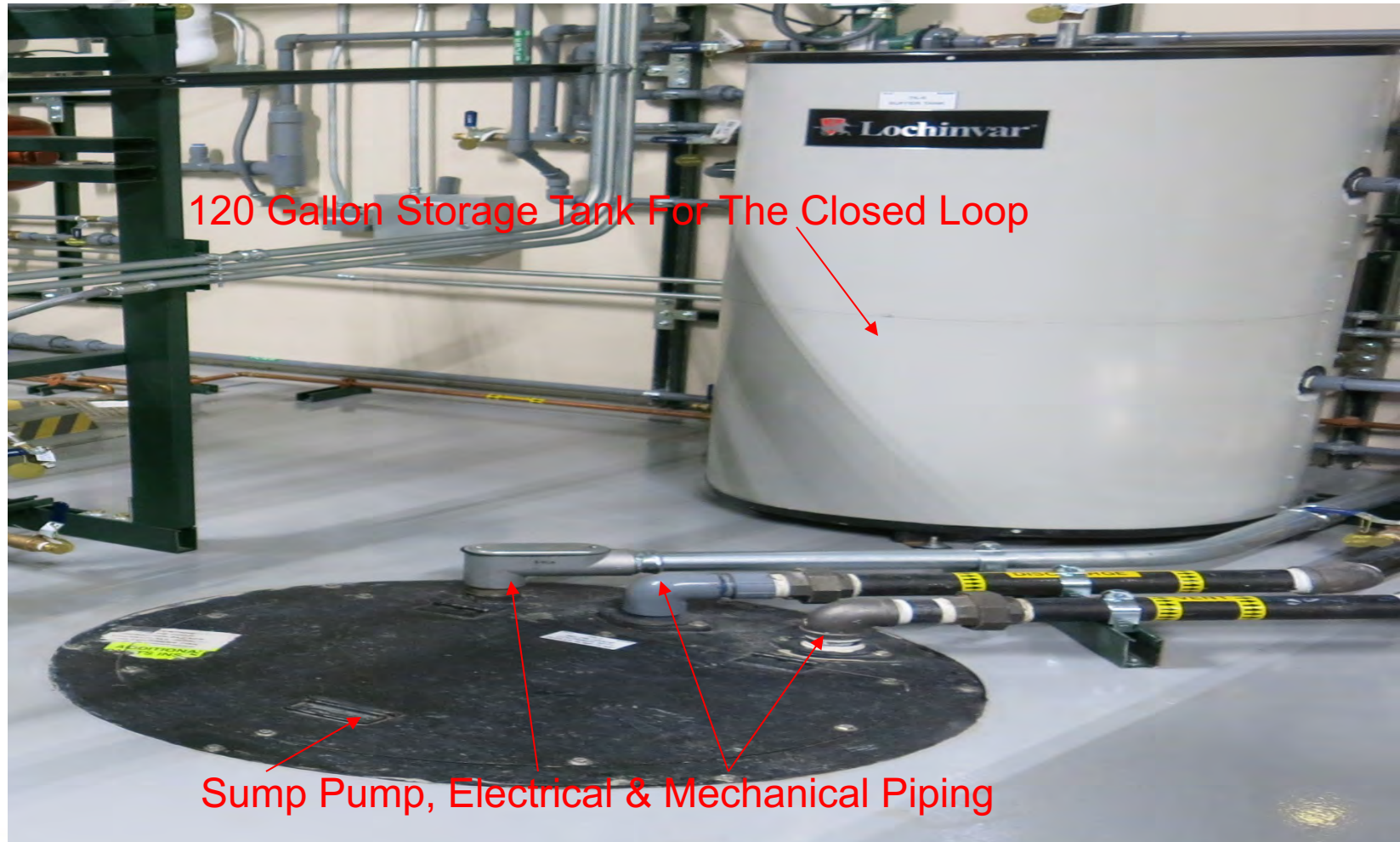
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Installed Outdoor Condensers, Indoor Chillers, & Indoor CRAC Units. All Are N+1



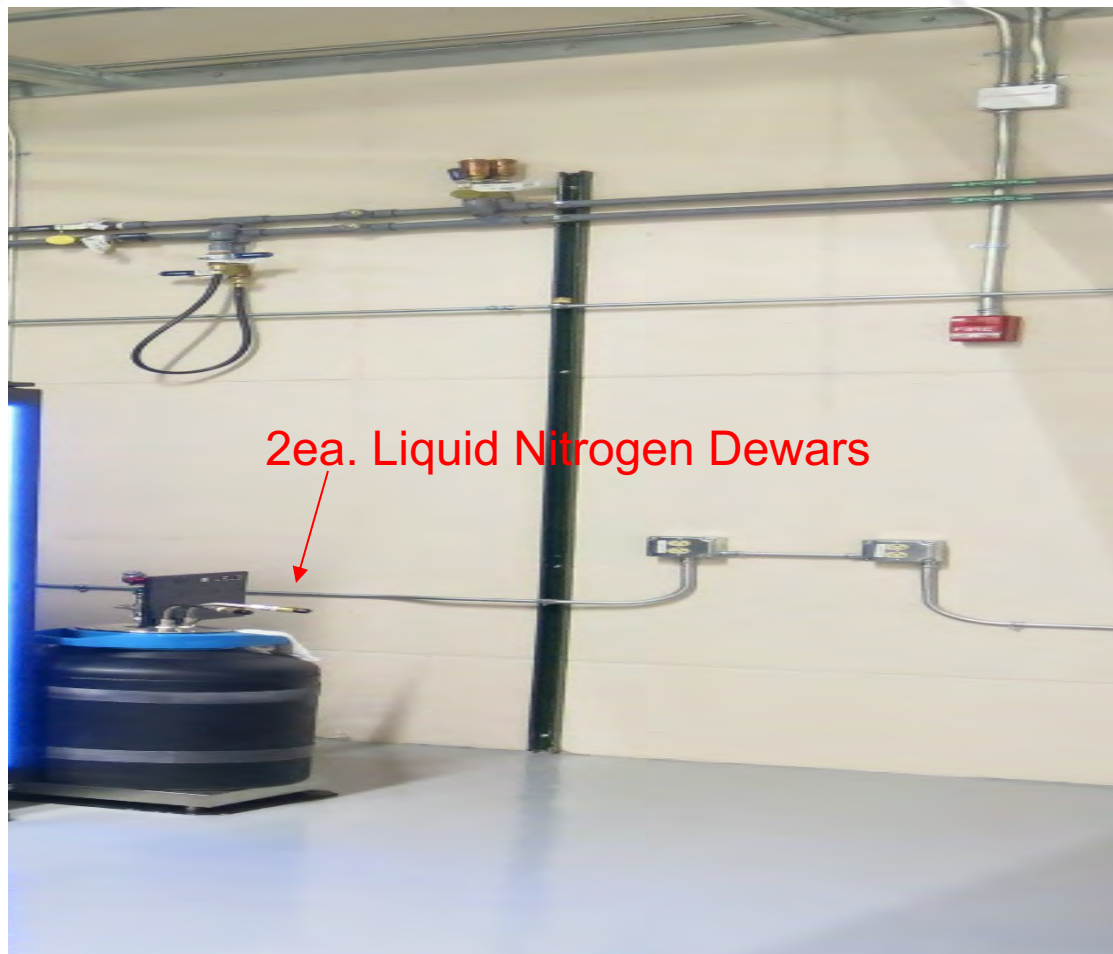
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Sump Pump and 120 Gallon Closed Loop Tank



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Liquid Nitrogen Dewars. N+1 Dewars



2ea. Liquid Nitrogen Dewars

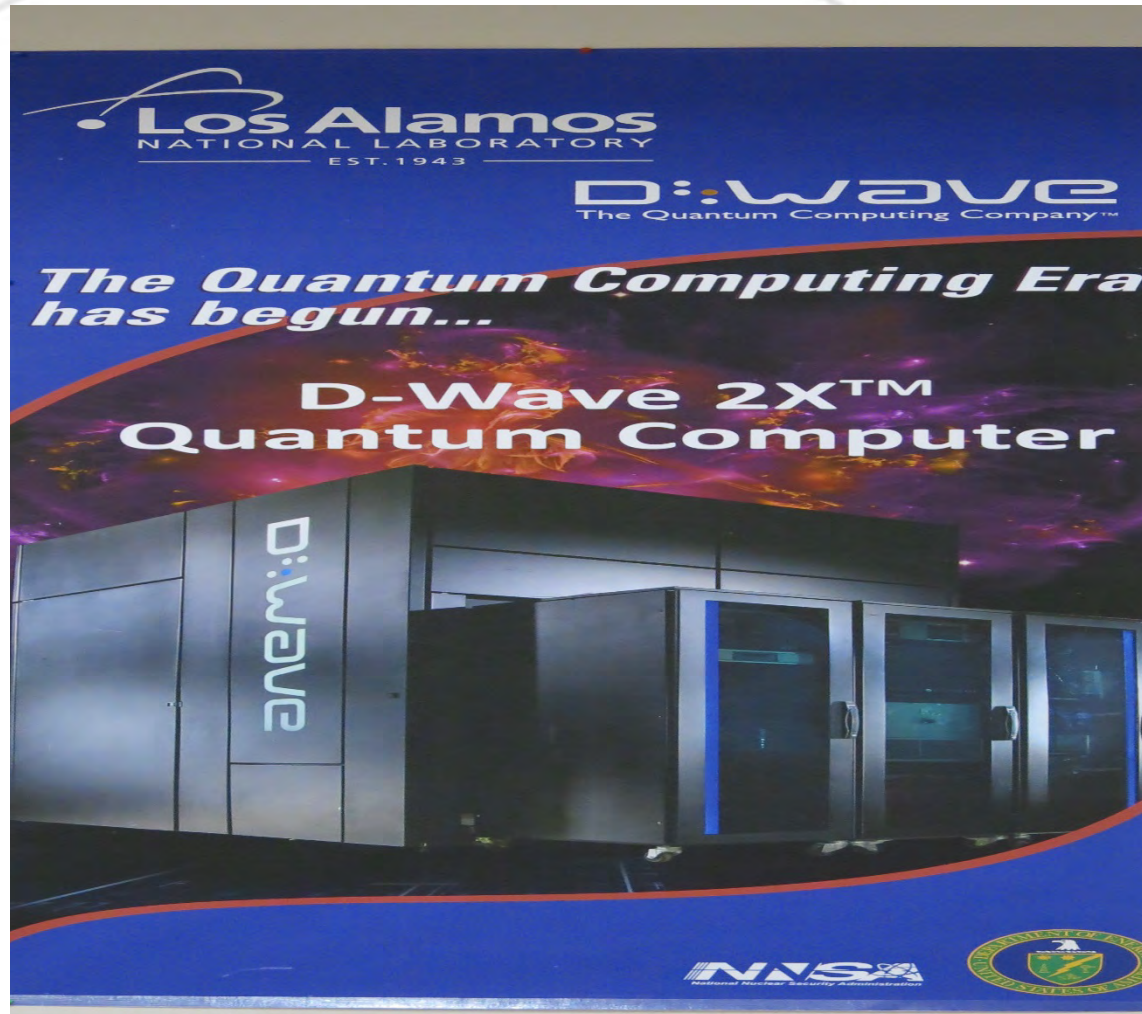
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D-WAVE Electrical & Mechanical Infrastructure



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D-WAVE



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